Is it too late (to stop dangerous climate change)? An editorial

Mike Hulme, 20 August 2019

Department of Geography, University of Cambridge

For *WIREs Climate Change*

Abstract

This editorial introduces a *WIREs Climate Change* Special Collection of nine Opinion Articles, each answering the question, 'Is it too late (to stop dangerous climate change)?' Given the rising sense of urgency--and for some despair—to arrest climate change, these invited authors were asked to develop their own answer to this question, or indeed to challenge it's framing. What might 'too late' mean? Too late for what exactly, or for whom? What effect might the language of 'too late' have on the public imagination, on political discourse and on academic research? This collection of essays reveals a diversity of ways of thinking about the relationship between climate and humanity, different modes of analysis and different prognoses for the future, ranging from qualified pessimism through pragmatic realism to qualified hope.

Introduction

Something happened to the climate of public discourse about climate during the year 2018/19. A new sense of urgency began to be promulgated by new political actors and social movements, at least in Europe and North America. The idea of 'time running out' gained increasing salience, of there being only '12 more years remaining to save the future', of feeling that 'panic' was a needed and appropriate response to the unfolding changes occurring to the world's climate.

This new discursive climate was shaped through numerous interventions, but perhaps most symbolically powerfully were two new voices who appeared on the public stage. One of these was the American politician and activist Alexandria Ocasio-Cortez who, as a House Representative for a New York congressional district, become a disruptive voice from the left of American politics. Early in 2019 she began to champion a reformulated Green New Deal as the best way for a future United States to tackle climate change. This was a necessary and urgent response, she argued, to the

existential dangers posed by climate change, “Millennials and people, you know, Gen Z and all these folks that will come after us are looking up and we’re like: The world is going to end in 12 years if we don’t address climate change and your biggest issue is how are we gonna pay for it?"[i] A very different voice was that of Greta Thunberg, a Swedish teenage schoolgirl. Having started her lone school strike in August 2018, Thunberg rapidly became the voice of a new generation of young people around the world. Not afraid of using blunt imagery, Thunberg claims that climate change is ‘an existential crisis’, that ‘the house is on fire’, that ‘panic is an appropriate response’ and that climate change is ‘an emergency’. Starting during the late autumn of 2018, climate emergencies have indeed been declared within numerous jurisdictions operating at different scales, including by the UK Parliament in May 2019.

But there is also no shortage of more established voices, or voices of hardened environmental journalists, making similar claims. For example in September 2018, the UN secretary-general, António Guterres, made the bald claim, “We face a direct existential threat” from climate change. “If we do not change course by 2020, we risk missing the point where we can avoid runaway climate change, with disastrous consequences for people and all the natural systems that sustain us.”[ii] The veteran American commentator Tom Englehardt has placed humanity on a suicide watch for itself. “Even for an old man like me”, he says, “it’s a terrifying thing to watch humanity make a decision, however inchoate, to essentially commit suicide.”[iii] And the octogenarian UK academic Meyer Hillmann has claimed that it is too late to stop climate change. “We’re doomed”, he says, “because climate change will decimate life on earth”.[iv] A few years earlier, in his book *Reason in a Dark Time,* environmental philosopher Dale Jamieson had already explained why we have failed to stop climate change (Jamieson, 2014).

It would seem therefore that, at least for some, it is already too late.

Two scientific publications published during 2018 seem to have been significant in shaping the narrative for some of these commentators. In August 2018 the *Proceedings of the National Academy of Sciences* published a paper titled, ‘Trajectories of the Earth System in the Anthropocene’, which became the fourth most-mentioned published article of 2018 across all of science[v]. The authors speculated about the risk of what they termed a future “hothouse Earth”. “Where such a threshold [to trigger such an outcome] might be is uncertain, but it could be only decades ahead at a temperature rise of ∼2.0°C above pre-industrial and thus it could be within the range of the Paris Accord [sic] temperature targets” (Steffen et al., 2018: 8257). And then, a few

months after this, the IPCC published their *Special Report on Global Warming of 1.5°C* (IPCC, 2018), an assessment that had been requested in December 2015 by the Parties to the UNFCCC. This IPCC Report would appear to have been the origin of the slogan 'we have only 12 years left'. The IPCC claims that "global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate" (IPCC, 2018: 6); so *if* 1.5°C is the threshold of climate danger then reaching it, according to the IPCC, in fact lies between 12 and 34 years away. The IPCC Report also estimated that "In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO_2 emissions decline by about 45% from 2010 levels by 2030 … reaching net zero around 2050 …" (IPCC, 2018: 14); so maybe *this* reference to 2030 is the origin of the '12 years' claim.

There is a long history of climate deadlines being set publicly by commentators, politicians and campaigners … and then of those deadlines passing with the threat unrealised. For example, back in October 2006 the UK Prime Minister Tony Blair declared that "… we have a window of only 10-15 years to take the steps we need to avoid crossing catastrophic tipping points." And Andrew Simms of the New Economics Foundation think-tank set his climate clock ticking on 1 August 2008, claiming that there were only 100 months left to prevent global climatic disaster. In his own words, Simms shouted 'fire' in claiming that by 1 December 2016 "we could reach a tipping point for the beginnings of runaway climate change"[vi], pre-empting Thunberg's 'house on fire' by more than a decade. This metaphor of the countdown clock has been re-invigorated over the past 2 or 3 years with new on-line climate clocks being established at the Mercator Institute in Berlin[vii] and at the Human Impact Lab in Montreal[viii], counting down by the second to 'the end' (Asayama et al., 2019).

There is an equally long history of portraying the climatic future in fearful and apocalyptic terms (Killingworth & Palmer, 1996; Buell, 2003; Boia, 2005). This trope did not start with Wallace-Wells' recent book, '*The Uninhabitable Earth: a Story of the Future*' (Wallace-Wells, 2019)--although he certainly aligned himself with the new climate zeitgeist expressed by Ocasio-Cortez and Thunberg. In the years following 9/11 climate change was frequently compared with the threats of weapons of mass destruction and global terrorism and claimed to be much greater (Hulme, 2008), while Risbey (2008) suggested that the language of urgency, crisis and catastrophe was indeed appropriate to use for climate change. But what seems different now is the seeming precision of the new deadline and the wider fears and anxieties about the future which this language has unleashed. As with a student paralysed by writer's block as the deadline for submitting her dissertation approaches, panic sets in.

The implications of this new climate of deadline-ism are important to reflect on (Asayama et al., 2019). First, the rhetoric of deadlines and 'it's too late' does not do justice to what we know *scientifically* about climate change. Climate prediction science is based on probabilistic forecasts which underpin the quantification of risk. There is a range of possible values for future global warming. It is as false scientifically to say that the climate future *will* be catastrophic as it is to say with certainty that it *will* be merely lukewarm. Neither is there a cliff edge to fall over in 2030 or at 1.5°C of warming, as indeed the IPCC's 2018 Report makes clear. There are many ways to set a policy deadline, but you can't do it by science alone.

Second, the rhetoric of climate endings and extinction does not help *psychologically* – which is the main point made by O'Neill and Nicholson-Cole (2009) in their widely cited article titled 'Fear won't do it'. It all too easily induces feelings of terror, as Ed Maibach at George Mason University exemplifies, "As a public health professional (and as a human), I find the prospect of 3 or 4 degree C of global warming to be nothing short of terrifying."[ix] But inducing a state of terror generates counter-productive responses in human behaviour (Wolf & Tubi, 2019) and also creates political space for the unthinkable. Just as invoking a state of terror after 9/11 paralysed people's critical thinking and made many Americans and others accept the reckless decision by Bush administration to invade Iraq, a state of terror can do the same thing for climate change. For example, some scientists are now advocating to use dangerous technologies such as solar climate engineering to seek to stop global warming. As Lizzie Burns, a director's of one of these project teams based at Harvard University has said: "Our idea [solar climate engineering] is terrifying… but so is climate change."[x]

Nor does the rhetoric of climate deadlines and extinction help *politically*. Simply 'uniting behind the science' or 'passing on the words of science' gets us no further forward. Even *if* climate science predicted the extinction of humanity, climate change "raises a host of ethical, historical and cultural questions that are at most tangentially connected to any scientific findings" (Evensen, 2019: 429). Answering these questions is the hard business of politics that simply and repeatedly asserting an artificial deadlines cannot short-circuit. And, finally, the rhetoric of extinction and 'it's too late' does not help *morally*. Again, even *if* we took these claims literally, the mere *fact* of human extinction by no means impels us to conclude that the correct moral response must be to prevent that extinction. There may well be other moral demands upon us which take precedence, and yet which we ignore (Gottlieb, 2019). Why the human species above other species? Why are

future generations more morally demanding of us than the dispossessed victims of today? Why is suicide the worst sin of all?

Despite what some activists like Thunberg claim, climate change is not a black and white issue. It has many shades of grey. By this I mean that while the fact that humans are altering the world's climate is absolutely clear, the *significance* of this fact is not self-evident. As many have realised for a long time now, climate change is a 'wicked problem' (Hulme, 2009). To believe that there is an absolute truth to be told about what climate change means, or what 'it demands' of each of us, is misguided. What climate change means to each person is not revealed truth emerging from some scientific script. The political meanings and individual and collective responses to climate change have to be worked out iteratively and in association with those who think differently to us, sometimes radically so. They have to be negotiated within the political structures and processes we inhabit, negotiations that can't be circumvented by an appeal to the authority of science being 'on our side'. (Although of course this 'working out' must also include the possibility of renegotiating some of those same political structures).

The Special Collection

Against this background and context, in the autumn of 2018 *WIREs Climate Change* commissioned a series of Opinion Articles from carefully selected authors from different regions of the world and from different disciplines to explore a range of answers to this question: 'Is it too late (to stop dangerous climate change)?' The sub-title--'to stop dangerous climate change'—is used deliberately to reflect the framing of the politics of climate change which was put in play back in 1992. Article 2 of the UN Framework Convention on Climate Change stated that the 'ultimate objective' of the Convention was "to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent *dangerous anthropogenic interference* [emphasis added] with the climate system" From the mid-1990s onwards, 2°C of global warming above an imagined pre-industrial climate emerged as a negotiated target threshold to aim for, but the specification of 'dangerous climate change' took a new turn following the 2015 Paris Agreement. The Paris Agreement offered the aspirational target of 1.5°C as appropriate to aim for, an aspiration which the IPCC's subsequent Special Report seems to have reified as the new absolute definition of climate danger in the minds of many.

Including co-authors, a total of 14 scholars, seven female and seven male, from nine different countries were enrolled to write nine essays for the journal. This collection of voices is intended to address the question from various geographical, gendered and disciplinary perspectives--for example from the disciplines of eco-criticism, politics and international relations, post-colonial studies, ethics, integrated assessment, energy economics and behavioural psychology. The commissioned authors were given free rein to interpret the question how they wished and to develop their answers accordingly – or indeed to challenge the framing of the question. What might 'too late' *mean*? Too late for what exactly, or for whom? What effect might the language of 'too late' have on the public imagination, on political discourse and on academic research? Why has this sense of time running out appeared at this particular moment?

The nine essays appearing in this Special Issue of *WIREs Climate Change*, volume 11(1), 2020, are as follows:

- Bain,P. (UK) & Bongiorno,R. (UK) *It's not too late to do the right thing: moral motivations for climate change action*
- Dubash,D. (India) *Revisiting climate ambition: the case for prioritising current action over future intent*
- Farbotko,C. (Australia) *Is it too late to prevent systemic danger to the world's poor?*
- Garrard,G. (Canada) *Never too soon, always too late: reflections on climate temporality*
- Hayward,B. (NZ), Salili,D. (Fiji), Tupuana'I,L. (NZ) & Tualamali'I,J. (NZ) *It's not 'too late'. Learning from Pacific Small Island Developing States in a warming world*
- Jewell,J. and Cherp,A. (Sweden) *On the political feasibility of climate stabilisation pathways: is it too late to keep warming below 1.5C?*
- La Rovere,E. (Brazil) *The potential contribution of emerging economies to stop dangerous climate change: the case of Brazil*
- Moser,S. (USA) *The work after 'it's too late' (to prevent dangerous climate change)*
- Whyte,K. (USA) *Too late for indigenous climate justice: ecological and relational tipping points*

So is it too late?

The nine contributions to this Collection speak for themselves, but let me here draw together a few threads from across these essays and offer a few interpretative perspectives of my own. I identify four broad approaches to how these commissioned authors answer the question.

The first position is the pragmatic realism and guarded optimism expressed in the essays written by Jewell, Dubash and La Rovere. Jewell and Cherp (2020) and Dubash (2020) agree about the importance of getting the politics of climate change right if climate change is to be arrested anytime soon. Jewell and Cherp are concerned that economic and technical feasibility assessments of deep emissions cuts have squeezed out the harder work of evaluating their political feasibility. These authors want to offer some hope that change *will* happen fast enough, but in the end are pessimistic that the necessary political alignments are achievable. As if to illustrate Jewell's argument, La Rovere (2020) offers an optimistic view about what can be achieved technically and economically, emphasising the possibilities of low emissions development strategies (LEDS) in his illustrative case of Brazil. "It may not be too late to stop dangerous climate change", he concludes. And yet his conclusion comes with a huge caveat: "*If* these LEDS are made politically acceptable, then …" (La Rovere, 2020: xxx; emphasis added). Given the new politics of Brazil under Bolsonaro this '*if*' would seem to rather avoid the question of political feasibility, the very point Jewell and Cherp are making. La Rovere might equally well have concluded, 'It may be too late *unless* these LEDS are made politically acceptable', turning his hopeful optimism into political realism.

Dubash's position is somewhere in between these two. He recognises that too often desirability (i.e., good intentions) has been mistaken for (political) feasibility. For this reason he argues for a more pragmatic approach to the politics of delivering countries' Nationally Determined Contributions (NDCs). To escape mere rhetorical gaming—the eternal danger in international political negotiations--Dubash wants an emphasis on learning-by-doing. Countries should move forward, step-by-step, prioritising experimentation about which policies are economically, technically, socially *and* politically feasible (cf. Lawrence & Schäfer, 2019). He advocates for monitoring trends in actual policy *outcomes,* rather than merely calculating whether the pledged numbers stack up--as think tanks such as Climate Analytics repeatedly offer. This resonates closely with the argument recently put forward by Fuller and Font (2019: 322) with respect to the related problem of air pollution: "Switching the [evaluative] emphasis to trends and rates of change, rather

than compliance, would provide a transparent connection between policy measures and outcomes".

A second line of reasoning from some authors is to foreground the cultural resources available to different groups of people which can be deployed to resist the drivers and impacts of climate change. Hayward et al. (2020) write from a Pacific islands cultural perspective and draw attention to the traditional community values of *vai nui* or *fonofale* (i.e., interconnected well-living). In similar vein, Whyte's (2020) argument from an indigenous people's perspective in North America is to recognise the powerful notion of kinship and the qualities of trust, accountability and reciprocity that have long characterised such cultures. Both these authors seek to resist the simple idea of 'it's too late', but whereas Hayward et al. offer an optimistic account of how such cultural values can defuse some of the dangers of climate change, Whyte's analysis is darker. The historical damage already wrought on indigenous people in his continent, he argues, cannot easily be undone – certainly not unless environmental justice is placed at the forefront of all plans to tackle climate change. Again, just hitting the carbon or Celsius numbers is far from an adequate solution to the loss and damage caused by climate change.

A third approach to answering the question can be recognised in the arguments put forward by Bain and Bongiorno (2020) and Moser (2020). These two essays come at the question from a psychological angle and both develop positions that seek to offer hope. Bain and Bongiorno are quite explicit about this and suggest that diverse groups of people around the world are in fact quite prepared to embrace (radical) changes to their behaviours and social arrangements, changes that might be seen as necessary to undermine the drivers of climate change. For them, even now, "climate change can help bring about a more moral and caring society" (p.xxx). Moser on the other hand is a little more cautious. She too is seeking out sources of hope amidst apparent despair and finds it by focusing on the psychological and imaginative space that can open up for people after they have confronted what she calls both "the endings *and* possibilities" [emphasis added] of climate change. Whilst at one level this seems contradictory—it is simultaneously too late, but yet not too late, to stop dangerous climate change--Moser explores how hopeful action in the world can be sustained in the indeterminate time that now lies before us (cf. Stoknes, 2015). Although writing from a literary rather than a psychological perspective, Garrard's (2020) conclusion is not dissimilar. He resists the easy option of reducing our imaginative response to climate change to the

binary choice of either salvation or catastrophe. Yes, it is too late (to stop climate change), but it is not too late to "learn how to dwell in this predicament" (p.xxx).

Finally, a fourth approach to answering the question can be discerned among these authors. This is latent in several of the nine essays, but is most explicit in Farbotko (2020) and Whyte (2020) and to some degree also in Garrard (2020). This is to radically redefine the parameters of what climate change signifies, to refuse to be limited by the global numbers of carbon budgets or degrees Celsius that drive the discourse of '12 more years' and 'it's too late'. For Farbotko, far more important than asking 'Is it too late?' is to ask the ethically charged question 'For whom might it be too late?—a question echoed by Garrard. She argues that the climate solutions being pursued (to avoid dangerous climate change) may simply heighten other dangers for those who are already left out of the global systems and networks of wealth creation, livelihood security and human rights. This she calls out as "the systemic embedding of social exclusion" (p.xxx) and is as big a danger to human welfare and global justice as climate change itself, if not bigger.

Whyte also seeks to escape the narrow formulation of solving climate change as a question of getting the numbers right. For him the answer to climate change lies in re-opening the past, in considering a much larger set of interlinked dynamics of imperial history, economics, politics, justice and human development. In calling for equal attention to be given to 'relational tipping points' as to ecological ones, Whyte agrees with Farbotko in warning that mere climate solutionism, without attending adequately to environmental justice, may simply perpetuate future precarity for billions of people. Garrard also refuses to engage the question on its own terms, but his resistance is for a different reason. His reading of the question is rooted an understanding of the human condition as one comprising frailty, unknowability and ambitious, yet limited, moral and material agency. From his humanities perspective, shouldering climate change "more fully and profoundly than the politico-scientific framing of the IPCC allows" (p.xxx) means learning to live better with the predicament we have created rather than trying to solve it.

For these latter three authors in particular there are no numerical deadlines which can or should constrain or determine the necessary human reflection on climate change or that should shape our political action in the world. It is already well too late for many (Whyte), or may shortly be too late for many more (Farbotko), or else lateness itself is an unhelpful notion as we come to terms with the full implications of our humanity (Garrard)--which includes the material transformation of the planet and our profound cultural diversity.

Conclusion

In an essay published in 2018, literature PhD student Casey Williams at Duke University reflected on why eco-fiction so often gets climate change wrong. "It's tempting to read worsening disasters as portents of the apocalypse to come", he wrote, "a preface to some final lethal bang. But this isn't usually how environmental change, and especially not climate change, works. Climate change doesn't describe a single future catastrophe, but a slow and uneven unraveling, a drawn-out apocalypse that began long ago and that will stretch to an end that probably won't feel like much of an ending at all. For most people, climate change is ordinary danger amplified, enduring injustice heightened."[xi] Williams' perspective provides a useful antidote to the trope of 'too-lateness'. As several of the authors in this Special Collection observe, it is never too late to do the right thing. There is always tomorrow. Even though Whyte (2020) reminds us that we cannot undo the past—in fact *because* of this fact--it is essential for humans to continue to seek out the sources of hope, creativity, respect and solidarity that characterise the human reflex at its best.

This difference of perspective—between imagining at time after which it is too late or refusing to concede to such a framing--is a result of different temporal calendars and epistemic claims being applied to the question of climate change. On the one hand is the calculative logic of reductive science that fuels the dystopias of climate emergencies, a hothouse Earth and the unravelling of human civilization. The latter discourse has great power over the human imagination. But it is dangerous to reduce the possibilities of the future to being defined by climate alone (Hulme, 2011), especially when the opportunities for shaping that future are truncated by an unyielding artificial deadline. Since the desired outcome—climatic salvation--is beyond our limited human abilities to engineer this way of thinking holds only the promise of failure. The deadlines which underpin the fears of it being 'too late' lean upon the moral power of absolutes, a dangerous even idolatrous force when left untempered by the political and human virtues of pragmatism and humility (Stenmark, 2015). Building a movement on such arbitrary deadlines narrows the horizon of political action and judges 'success' on a frighteningly limited set of criteria.

On the other hand is the open-ended and irrepressible unfolding of human history which encounters no innate boundaries, sub-divisions or endings. History does not end, the future is not pre-ordained and it is never too late to do the right thing. Responding appropriately to the harsh realities of climate change is not really a question of whether or not particular numerical targets

(whether of carbon emissions or global temperature) are hit by 2030, 2040 or 2050. These enumerations of the future, at best, are only standing in for deeper motivational instincts that instead should guide human action in the world: justice, dignity, kinship, hope. At worst, they emasculate the ethical and political deliberation and energy that is needed to create the future in all its variegated dimensions. A focus on the numbers alone merely "creates incentives for gaming pledges", as Dubash (2020: xxx) puts it. For all of the authors in this WIREs Special Collection, *how* one gets there matters more, and for some authors much more, than merely getting there. Means *do* matter more than ends. Or putting this differently, there are some futures beyond 1.5°C (or even 2°C) that are *more* desirable than other futures which do not exceed these warming thresholds. We should not mistake one set for the other.

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